

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended) A method of providing one or more shaped openings through a material comprising:

1) providing a material having at least one edge portion, an interior zone having a first area and an interior portion being within the interior zone and having a second area being less than the first area;

2) providing a cutting device to cut said material, said cutting device providing a hybrid liquid-jet/laser stream;

3) impinging the stream against the interior portion of the material while moving said material relative to said stream at a first velocity until said stream fully penetrates the material;

4) thereafter impinging the stream against the material while moving said material relative to said stream at a second velocity, at least a portion of the stream continuing to fully penetrate the material so as to ~~provide an opening of a predetermined shape in~~ remove the material of the interior portion, the second area being greater than the area directly penetrated by the stream; and

5) then removing the remainder of the material from the interior zone.

2. (original) The method of claim 1, further comprising:

2a) impinging the stream against the interior portion of the material to form an aperture during an initial dwell.

2b) thereafter accelerating said material relative to said stream to a first velocity.

3. (original) The method of claim 2, wherein the initial dwell ranges from 50 – 500 milliseconds.

4. (original) The method of claim 1, wherein said first velocity is lower than said second velocity.
5. (original) The method of claim 1, wherein said liquid is water.
6. (original) The method of claim 1, wherein steps 3) and 4) are repeated one or more times so as to cut a plurality of openings of predetermined shape in the material.
7. (original) The method of claim 6 wherein the material is repositioned relative to the stream in between repetition of steps 3) and 4).
8. (original) The method of claim 7, wherein the material is a stent precursor.
9. (original) The method of claim 7, wherein the material is a catheter precursor.
10. (original) The method of claim 7, wherein the material is a flat sheet of material.
11. (original) The method of claim 7, wherein the material is a tube.
12. (original) The method of claim 11, wherein the material is a catheter tube precursor
13. (original) The method of claim 11, wherein said tube is metal.
14. (original) The method of claim 13, wherein the tube is a stent precursor.

15. (original) The method of claim 1, wherein a plurality of openings are provided in the material to form a stent.

16. (original) The method of claim 1, wherein said material is moved with the cutting device remaining stationary.

17. (currently amended) A method of cutting a product from a tube of material comprising:

providing a tube of material, the tube having a first end, a second end, a wall disposed therebetween and a lumen extending therethrough, the tube wall having an interior zone having first area and interior portion being within the interior zone and having a second area being less than the first area;

providing a cutting device to cut said tube, said cutting device providing a hybrid liquid-jet/laser stream;

impinging the stream against the tube at a location between the first and second ends and within the interior zone;

establishing a cut lead-in by moving said tube relative to said stream until a portion of the stream fully penetrates the wall of the tube and extends into the lumen;

thereafter moving said tube relative to said stream to provide a cut along a predetermined cut path to remove the material from the interior portion, the second area being greater than area directly penetrated by the stream; and
then removing the remainder of the material from the interior zone.

18. (original) The method of claim 17, wherein the tube is moved relative to the stream at a constant velocity.

19. (original) The method of claim 17, wherein said cut lead-in is established in a waste area.

20. (original) The method of claim 17, wherein said laser is a pulsed laser having a repetition rate.

21. (original) The method of claim 20, wherein said laser is operated at a first repetition rate during said cut lead-in.

22. (original) The method of claim 21, wherein said laser is operated at a second repetition rate after said lead-in is established.

23. (cancel)